**THE ANALYSIS OF JAVA PROGRAMMING LANGUAGE APPLICATION OPPORTUNITY TO ELECTRICAL IMPEDANCE TOMOGRAPHY CASES SOLUTION.**

Software development for the Electrical Impedance Tomography (EIT) cases solution is supposed to have the set of problems associated with the specific of this area.

Basic requirements for the software for this field are:

* high calculation accuracy;
* data array visualization opportunity;
* application simplicity;
* static data processing;
* patient treatment account;
* research result storage.

For the solution to the set task the analysis of Java programming language application opportunity, its standard components and syntax, and also the extention of basic functional by external libraries was conducted.

The advantages of software development on Java are:

* cross-platform software;
* simple and cheap development;
* vast developers community;
* huge number of ready solutions;
* good Russian documentation;
* affordable software development on Linux.

For the research and opportunity analysis were performed free development environment NetBeansIDE had been used.

NetBeans IDE is a free integrated application development environment on Java, Python, PHP, JavaScript, C, C++ and other programming languages. The NetBeans IDE project is supported and fund by the Oracle company, yet NetBeans is developed by the independent enthusiastic programmers community (NetBeans Community) and the NetBeans Org. For the complete application development the available preset Sun Java Development Kit or J2EE SDK are required.

During the opportunity analysis of Java ready solutions application for the EIT cases the following libraries were examined.

CommonsMath 3 – this is the simple to use library for mathematical and statistical calculations realization which are not Java standard components. It allows to define variance, standard deviation, median, minimum and maximum. Any external dependencies are not required for the use.

XChart 2.5 – this library allows to realize different graphical data representation, for example, histograms, linear graphs or circle diagrams. The library is simple to use and does not have any external dependencies.

ApachePOI – the library was designed for working with Excel and Word documents. This library makes easy to read and write files with regulated markup. For the library the special dependency is required.

Thus, due to the possibility of use the ready solutions Java programming language affords to solve EIT cases. The main advantages of this procedure are cross-platform, low entry threshold and large developer community.